

AMENDMENT UNDER 37 C.F.R. § 1.111
U.S. Application No. 10/809,952
Attorney Docket No. Q80495

AMENDMENTS TO THE CLAIMS

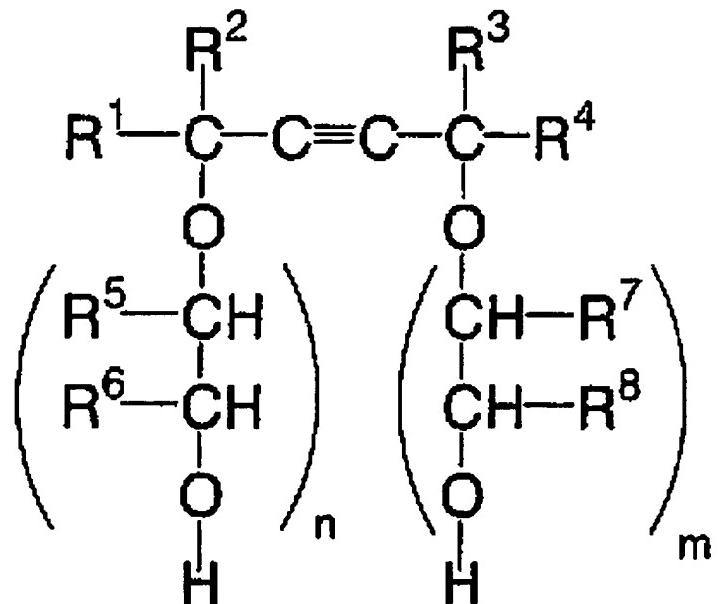
This listing of claims will replace all prior versions and listings of claims in the application:

LISTING OF CLAIMS:

1. (Currently amended) A heat-sensitive recording material comprising, on a support, at least a heat-sensitive recording layer and a protective layer in that order,

wherein the protective layer contains an acetylene glycol derivative represented by the following formula (1) in an amount of 2% or more by mass of solid content in the protective layer, a water-insoluble dispersion in an amount of 5% or more by mass of the solid content in the protective layer, and a water-insoluble organic material in a form of an emulsion in an amount of 5% or more by mass of the solid content in the protective layer:

Formula (1)



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wherein in formula (1), R¹ to R⁴ each independently represent a hydrogen atom, a branched, linear or cyclic substituted or unsubstituted alkyl group having 1 to 8 carbon atoms, or a substituted or unsubstituted aryl group having 6 to 10 carbon atoms; R⁵ to R⁸ each independently represent a hydrogen atom or a methyl group; and n and m each independently represent an integer of 0 to 50, and

wherein:

(i) the water-insoluble dispersion comprises an inorganic pigment having a 50%-volume-average particle size of 0.10 to 5.00 µm, and the inorganic pigment is coated with at least one selected from the group consisting of higher fatty acids, metal salts of higher fatty acids, and higher alcohols; and/or

(ii) the water-insoluble organic material comprises a lubricant which is in liquid form at ordinary temperature and the lubricant is selected from the group consisting of silicone oil, liquid paraffin and lanolin.

2. (Original) A heat-sensitive recording material according to claim 1, wherein the sum of n and m in formula (1) is 6 or less.

3. (Original) A heat-sensitive recording material according to claim 1, wherein R¹ in formula (1) is selected from the group consisting of methyl, ethyl, n-propyl, isopropyl, n-butyl, isobutyl, cyclohexyl, phenyl and naphthyl groups.

4. (Original) A heat-sensitive recording material according to claim 1, wherein R² in formula (1) is selected from the group consisting of methyl, ethyl, n-propyl, isopropyl, n-butyl, isobutyl, cyclohexyl, phenyl and naphthyl groups.

5. (Original) A heat-sensitive recording material according to claim 1, wherein R³ in formula (1) is selected from the group consisting of methyl, ethyl, n-propyl, isopropyl, n-butyl, isobutyl, cyclohexyl, phenyl and naphthyl groups.

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6. (Original) A heat-sensitive recording material according to claim 1, wherein R⁴ in formula (1) is selected from the group consisting of methyl, ethyl, n-propyl, isopropyl, n-butyl, isobutyl, cyclohexyl, phenyl and naphthyl groups.

Claim 7 (Canceled)

8. (Currently amended) A heat-sensitive recording material according to claim-7_1, wherein the inorganic pigment is selected from the group consisting of calcium carbonate, titanium oxide, kaolin, aluminum hydroxide, amorphous silica, and zinc oxide.

9. (Currently amended) A heat-sensitive recording material according to claim 7_1, wherein the water-insoluble dispersion comprises an inorganic pigment having a 50%-volume-average particle size of 0.10 to 5.00 µm, and the inorganic pigment is coated with at least one selected from the group consisting of higher fatty acids, metal salts of higher fatty acids, and higher alcohols.

10. (Original) A heat-sensitive recording material according to claim 1, wherein the water-insoluble dispersion comprises a surface gloss adjusting agent.

11. (Original) A heat-sensitive recording material according to claim 1, wherein the water-insoluble dispersion comprises a matting agent.

12. (Original) A heat-sensitive recording material according to claim 1, wherein the water-insoluble organic material comprises a lubricant which has a melting point of 160°C or less, and is in solid form at ordinary temperature.

13. (Original) A heat-sensitive recording material according to claim 1, wherein the water-insoluble organic material comprises a lubricant which is in liquid form at ordinary

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temperature and the lubricant is selected from the group consisting of silicone oil, liquid paraffin and lanolin.

14. (Original) A heat-sensitive recording material according to claim 1, wherein the water-insoluble organic material has an average particle diameter of 0.1 to 5.0 μm .

15. (Original) A heat-sensitive recording material according to claim 1, wherein the protective layer further comprises a binder selected from the group consisting of polyvinyl alcohol, carboxy-modified polyvinyl alcohol, and silica-modified polyvinyl alcohol.

16. (Original) A heat-sensitive recording material according to claim 1, wherein the dry coated amount of the protective layer is from 0.2 to 7 g/m^2 .

17. (Original) A heat-sensitive recording material according to claim 1, wherein the support is a polymer film.

18. (Original) A heat-sensitive recording material according to claim 1, wherein all of the layers are simultaneously formed by multi-layer coating with an extruding die.

19. (Original) A heat-sensitive recording material according to claim 18, wherein the coating speed of the layers in the multi-layer coating is 100 m/min or more.